

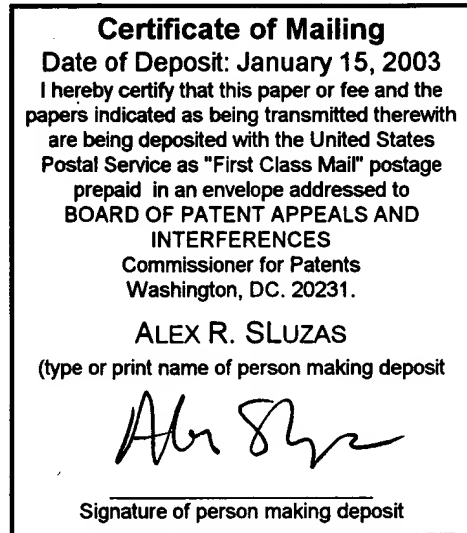


12/ Appeal Brief  
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2-1-03

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent  
appln. of: Albert J. Frattarola  
  
Serial No.: 09/803,221  
  
Filed: March 9, 2001  
  
For: **FLOATING CAPTIVE SCREW**  
  
Examiner: Flemming Saether  
  
Art Unit: 3679  
  
Att'y Docket: 061-01



BOARD OF PATENT APPEALS  
AND INTERFERENCES

Commissioner for Patents  
Washington D.C. 20231

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APPEAL BRIEF

Sir:

This appeal brief is submitted under certificate of mailing on Wednesday, January 15, 2003 in support of Notice of Appeal mailed under Certificate of Mailing on October 17, 2002, in response to the Examiner's Action mailed May 31, 2002 in the above-referenced patent application finally rejecting claims 1-5. A petition for a one-month extension of time for filing this appeal brief accompanies this filing.

I. Real Party in Interest

This application has been assigned to Southco, Inc., a Delaware corporation.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

The claims in the application are claims 1-5.

No claims stand allowed.

Claims 1-5 stand finally rejected.

The claims on appeal are claims 1-5.

IV. Status of Amendments

Claim 3 was amended to correct punctuation subsequent to the final rejection in the Amendment filed August 27, 2002. The amendment was entered for purposes of this appeal by an Advisory Action dated September 16, 2002.

V. Summary of the Invention

The present invention provides a captive screw including a ferrule, a screw, and a spring. The screw has a head, a shank adapted to pass through the ferrule, a threaded portion at the end of the shank opposite the head, and a collar formed on the shank proximate the threaded portion. The screw is captivated on the ferrule between the head and the collar. The spring extends on the shank of the screw between the head and the ferrule. Preferably, the ferrule has a generally cylindrical exterior surface having a plurality of knurls for securing the captive screw in a preformed aperture in a first structure, such as a lever. Is also preferred that the ferrule be formed with an annular collapsible ring section formed on the bottom having a generally circular opening large enough to permit the threads collar the screw to pass through but not

large enough to permit the spring to pass through. When the captive screw is assembled, the annular ring section is bent upwardly to captivate the screw on the ferrule. Preferably, the ferrule has an annular lip formed on the exterior cylindrical surface proximate the top of the ferrule for limiting the penetration of the ferrule in the preformed aperture in the first structure, as well as an annular circumferential groove formed in the exterior cylindrical surface of the ferrule immediately adjacent and below the annular lip for receiving the plastic flow of material when the ferrule is pressed into the preformed aperture.

VI. Issues Presented

A. Whether the Examiner erred in his conclusion that U.S. Patent 3,204,680 ("Barry", see copy enclosed for Board's convenience) renders claim 1 unpatentable as anticipated under 35 U.S.C. 102(b).

B. Whether the Examiner erred in his conclusion that the combination of Barry and U.S. Patent 5,941,669 ("Aukzemas", see copy enclosed for Board's convenience) renders claims 2-5 unpatentable as obvious under 35 U.S.C. 103(a).

VII. Grouping of Claims

The claims are grouped into Group A, consisting solely of claim 1; and Group B, consisting of claims 2-5.

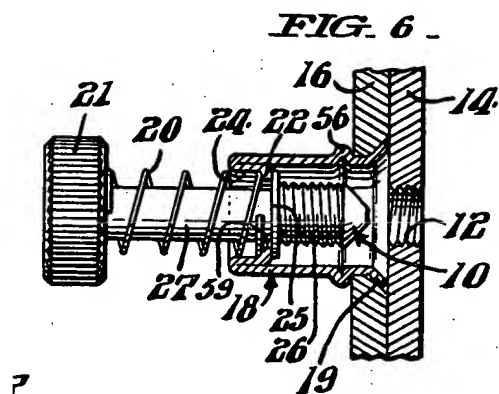
VIII. Argument

The Examiner's rejections are not correct.

A. BARRY DOES NOT ANTICIPATE OR SUGGEST THE INVENTION

Claim 1 (Group A) stands finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,204,680 ("Barry"). Careful consideration and reversal of the Examiner's rejection are respectfully requested.

The Examiner states that Barry discloses a captive screw comprising a ferrule (18); a screw having a head (21), shank (27), threads (26) and collar (25); and a spring (20) (See Barry Fig. 6, reproduced below). The Examiner notes that the screw is captured in the ferrule.



Responding to applicant's argument that the references to Barry do not show a collar, the Examiner disagrees, stating that a collar is referenced at number 25 in Barry. The Examiner states in the alternative that the location where the threads ends which form a lip could be read as a collar. The Examiner concludes the claims do not set forth any distinguishing features to the collar that would define it over that shown in the prior art.

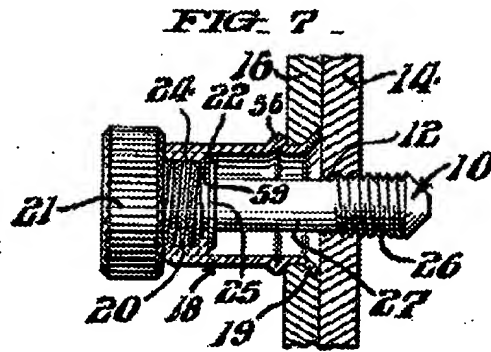
Applicant respectfully disagrees with the Examiner's conclusion.

The structure identified by reference number 25 in Barry is not a collar, as required by the present claims, but rather a retaining ring differing both in structure and in function from the collar of the present invention.

Barry's retaining ring is not "formed on the shank" as required by claim 1, but rather is a separate structural element that is "free to move along the non-threaded throat 27 of the screw 10 and may take up any position on the throat between the flange 22 and main frame 14, or between the flange 22 and the threads 26 if the threaded portion of the screw is not completely embedded in the main frame" (col. 1,

line 72 – col. 2, line 4). Because the collar of the present invention is formed on the shank of the screw, it cannot move along the shank.

The Examiner's alternative reading finds no support in Barry. Barry does not disclose a lip to be formed at the location where the treads end. In fact, Barry's disclosure contradicts the Examiner's assertion that such a lip exists. Fig. 7 (reproduced below) shows the male thread of the screw engaging the female thread of the main frame 14 to the extent that the unthreaded portion of the screw partially extends into the tapped hole 12 in the main frame 14. If a lip existed, this could not happen.



Because Barry does not identically disclose applicant's invention, reversal of the rejection entered under 35 U.S.C. 102(b) over Barry is respectfully requested.

Further, as previously noted, the presently claimed invention is not obvious over Barry.

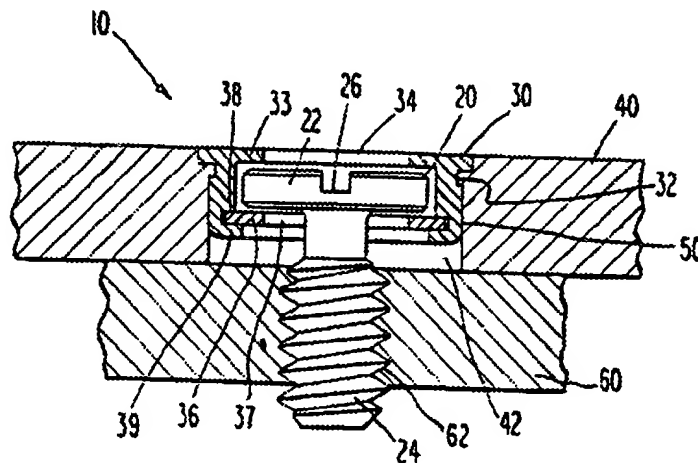
Barry's spring's function is to fully retract the screw into the "stand-off bushing" or ferrule, "thus permitting movement of the removable panel sideways with respect to the main frame, without scratching the main frame or damaging the threads of the screw" (col. 1, lines 30-33). Thus, one of ordinary skill in the art would have no motivation to provide a collar on the shank of the screw. Providing such a collar would

prevent full retraction of the screw into the stand-up bushing or ferrule, and Barry's essential purpose would not be achieved if this occurred.

B. THE COMBINATION OF BARRY AND AUKZEMAS DOES NOT MAKE OBVIOUS THE SUBJECT MATTER OF CLAIMS 2-5.

Claims 2-5 (Group B) stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Barry as applied to claim 1 above, and further in view of U.S. Patent 5,941,669 ("Aukzemas"). Careful consideration and reversal of the rejection are also respectfully requested.

The Examiner states that Aukzemas discloses the particulars of the ferrule. The Examiner notes in particular that the ferrule is disclosed as having a knurled outer surface including a groove (32) and annular lip (generally at 30) (See Aukzemas Fig. 1 reproduced below).



***Fig. 1***

The Examiner concludes that at the time the invention was made, it would have been obvious for one of ordinary skill in the art to the exterior of the ferrule of Barry as disclosed in the Aukzemas in order to improve its attachment to the panel. The Examiner restates that the ring on the ferrule being bent is a product-by-process

limitation wherein it is merely the final product that is considered for patentability, and that Barry shows a ring (22).

The Examiner's conclusion is not correct.

There is nothing in the combination of Barry and Aukzemas, or either cited reference considered individually, that would render the presently claimed invention obvious to one of ordinary skill in the art at the time the invention was made.

Aukzemas discloses a conventionally threaded screw shank, without a collar, such as is required by applicant's independent claim 1. Each of dependent claims 2-5 ultimately depend from claim 1, and thus each incorporates the limitation of the required collar. Thus, the combination of Barry and Aukzemas does not make out a *prima facie* case of obviousness, because the combination does not include all the limitations of the rejected claims.

Further, there is nothing in either of the cited references that teaches or suggests that the penetration of the screw into the main frame or panel be limited by the provision of a collar. The screw threads in Aukzemas extends all the way through the second panel 60 when the screw joins the first and second panels such the two panels are in contact with one another (Fig. 1). Similarly, there is nothing in Barry to space the panel 16 from the main frame 14 when the screw fastener is fully engaged (Fig. 7).

Reconsideration and reversal of the Examiner's rejection entered under 35 U.S.C. 103(a) over Barry in view of Aukzemas are respectfully requested for these reasons.

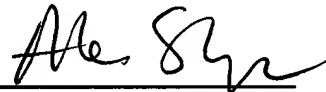
IX. Conclusion

As all claims as amended are believed to be in condition for allowance, an early favorable action and reversal of the rejections entered by the Examiner are earnestly solicited.

January 15, 2003

Respectfully submitted,

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# APPENDIX

## CLAIMS ON APPEAL:

1. A captive screw including:  
a ferrule,  
a screw having a head, a shank adapted to pass through the ferrule, a threaded portion at the end of the shank opposite the head, and a collar formed on the shank proximate the threaded portion; and  
a spring,  
the screw being captivated on the ferrule between the head and the collar, the spring extending on the shank of the screw between the head and the ferrule.
2. A captive screw according to claim 1 wherein the ferrule has a generally cylindrical exterior surface having a plurality of knurls for securing the captive screw in a preformed aperture in a first structure.
3. A captive screw according to claim 1 wherein the ferrule is formed with an annular collapsible ring section formed on the bottom having a generally circular opening large enough to permit the threads, collar, and the screw to pass through but not large enough to permit the spring to pass through, the annular ring section being bent upwardly to captivate the screw on the ferrule during assembly of the captive screw.
4. A captive screw according to claim 2 wherein the ferrule has an annular lip formed on the exterior cylindrical surface proximate the top of the ferrule for limiting the penetration of the ferrule in the preformed aperture in the first structure.
5. A captive screw according to claim 4 wherein the ferrule has an annular circumferential groove formed in the exterior cylindrical surface of the ferrule

immediately adjacent and below the annular lip for receiving the plastic flow of material when the ferrule is pressed into the preformed aperture.